ridged, not shaggy; outer dark bud-scales of terminal bud early deciduous, so winter buds light grayish-brown, silky-tomentose; husk medium thick; Mass. South and West *C. tomentosa* and var. *ficoides*, etc.

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THE HYBRID OF LYSIMACHIA TERRESTRIS AND L. THYRSIFLORA

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× LYSIMACHIA **commixta,** nom. nov. *L. terrestris* × *thyrsiflora* Fernald & Wiegand in RHODORA, xii. 141 (1910); Marie-Victorin, Fl. Laurent. 145 (1935).

This hybrid, described in 1910, is so abundant and constant in the northeastern area of the range in North America of *Lysimachia thyrsiflora* L. that it is quite as deserving of a binomial by which it can be referred to as is the mostly more southern × *L. producta* (Gray) Fernald. At its various stations it usually (or perhaps always) forms very extensive colonies exactly combining the characters of the two parents and in some cases not associated with either or both of them, just as is the case of × *L. producta*. The following collections are before me:

QUEBEC: environs d'Ottawa, Juillet 7, 1915, *Victorin;* Chateauguay, 1916, *Victorin;* grande colonie, Iles de Boucherville, Co. de Chambly, *Victorin & Rolland*, no. 43,148 and 44,155; Saint-Pierre-les-Becquets, Co. de Nicolet, *Victorin, Rolland and Meilleur*, no. 44,121; vers le haut de la zone intercotidale, Saint-Francois, Île d'Orleans, *Victorin, Rolland and Meilleur*, no. 44,388; swale bordering salt-marsh, Bic, Rimouski Co., *Fernald & Pease*, no. 25,230.

MAGDALEN ISLANDS: dune-hollow, Brion Island, *St. John*, no. 1966.

PRINCE EDWARD ISLAND: many acres in swale near margin of North Lake, Kings Co., *Fernald, Long & St. John*, no. 7935.

MAINE: many acres in boggy river-meadow, St. Croix Junction, Calais, *Fernald*, no. 2170 (TYPE in Herb. Gray.); tidal swales along Cathance River, Bowdoinham, *Fernald & Long*, no. 14,364.

VERMONT: swamp, abundant, Alburg, July 15, 1939, *C. H. Knowlton;* Middlebury, June 22 and Sept. 25, 1880, *Brainerd* (PARATYPE); margin of Otter Creek, Weybridge, July 15, 1938, *Knowlton;* swamp, Colchester, July 13, 1932, *Knowlton*.

NEW YORK: very wet places along the Erie Canal, 2 miles east of Utica, *Haberer*, no. 1363.

Not only is × *Lysimachia commixta* a dominant plant where it occurs. It also has a strong tendency to invade tidal marshes. Victorin says in his Flore Laurentienne: "L'hybride une fois formé se multiplie végétativement par les parties souterraines et peut former des colonies". It would be instructive if those situated to do so would follow the subterranean rhizomes and stolons to determine to what extent they are actually connected. The herbarium-material at hand shows no more subterranean development than in the two parent-species, one of which, *L. terrestris*, is often reproduced vegetatively (by axillary bulblets). In fact, it is the observation of many field-botanists that large areas of floriferous *L. terrestris* will contain no bulblet-bearing plants and, reciprocally, that all or essentially all plants of other areas will be flowerless, but with abundant vegetative bulblets. In the herbarium of the New England Botanical Club 245 plants have inflorescences but no bulblets, 33 have bulblets but no inflorescences, and 9 (all in ripe fruit) have both, the bulblets produced long after the flowering period.

It is, therefore, a striking fact that none of the hybrids of *Lysimachia terrestris* nor of the species with which it has so successfully hybridized should show any suggestion of the axillary bulblets which are so characteristic of *L. terrestris* and which gave the species its name (Linnaeus, calling it *Viscum terrestre* because he mistook the moniliform bulblets to be a mistletoe parasitic on an herb). It is also a striking fact that *L. terrestris* (of § *Ephemerum*) should have produced with the utterly different and only remotely related species a blend which is dominant and usually in a habitat quite unlike that occupied by the other parent. In the case of × *L. producta*, one parent (*L. terrestris*) is a paludal plant with opposite green ascending leaves, often bushy-branching habit, terminal racemes and axillary bulblets, the other parent, *L. quadrifolia* L. (of § *Verticillatae*), a plant chiefly of dry or dryish woodland, with purplish or reddish leaves in remote horizontal or reflexed whorls along the simple axis, and few divergent flowers from the axils. In case of the aggressively spreading × *L. commixta*, the second parent is the single member of the unique circumboreal § *Naumburgia*, so

distinct in habit and floral structure as often to be treated as a separate genus. Some others of our native species of *Lysimachia* belong to § *Steironema*, a group of species which is often treated as a distinct genus. So far as we yet know *L. terrestris* has not crossed with members of this unique section.

Here is an alluring problem for some of the very modern students of evolution. Nature has already posed the problem. Field-study, reenforced by the newer techniques of the laboratory and the garden, should throw light upon it. Inability longer to use a microscope forces the writer to leave the question to others.

ADIANTUM CAPILLUS-VENERIS IN THE UNITED STATES

M. L. Fernald

As I pointed out in Gray, Man. ed. 8, 48 (1950), "Our plant has longer and more slender rhizomes than the typical European plant; the various geographic vars. are not yet worked out". At the time of writing I tried in vain to "wish" the problem upon the late C. A. Weatherby, who had so far dipped into the genus as to join Maxon in describing new species from Central and South America. Now, assembling data on the affinities of the flora of temperate eastern North America, it becomes important to have a more exact picture of the situation than seems to have prevailed.

Typical *Adiantum Capillus-Veneris* was described by Linnaeus, Sp. Pl. ii. 1096 (1753) with "*Habitat in* Europa *australi.*" The species is now considered to be semi-cosmopolitan in warm parts of the globe ("Europa occ. et austr. Africa. Asia temp.-Himalaya. Ceylon. Queensland, Polynesia. U. S. A. merid. et occ.—Columbia-Amazonas. ? Ind. Occ."—*Christensen*). In general plants of such nearly world-wide range, within the tropical and warm-temperate latitudes, are not uniform; and, certainly, when in the western interior of the United States the species extends northward to ravines of the Black Hills, it is in an area with a relatively northern flora. It there occurs, however, at Cascade Spring, "along the banks of a stream of warm water which